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ABSTRACT

This document summarizes and describes the projected activities for the fifth funding period of the Center for Occupational Education. Specific projects and activities are directed toward achieving the following goals: (1) the development and implementation of comprehensive programs of occupational education in postsecondary institutions of the nation, (2) the development and implementation of programs of occupational education for persons in the formative years, (3) the improvement of programs of occupational education in the rural schools of the nation, and (4) the development and implementation of models and systems for evaluating programs of occupational education. A related document is available as VT 012 953. (Author/JS)

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PROJECTED ACTIVITIES FOR FIFTH FUNDING PERIOD AND ANNUAL REPORT

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THE CENTER FOR RESEARCH, DEVELOPMENT
AND TRAINING IN OCCUPATIONAL EDUCATION

July 1, 1970 to January 31, 1971

Submitted by

NORTH CAROLINA STATE UNIVERSITY AT RALEIGH
Raleigh, North Carolina

To

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THE ORGANIZATION AND ADMINISTRATION STUDIES BRANCH
DIVISION OF COMPREHENSIVE AND VOCATIONAL EDUCATION RESEARCH
NATIONAL CENTER FOR EDUCATIONAL RESEARCH AND DEVELOPMENT
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PROJECTED ACTIVITIES FOR THE FIFTH FUNDING PERIOD AND ANNUAL REPORT

1 July 1970 to 31 January 1971

INTRODUCTION

The publication entitled Projected Activities for Fourth Funding Period and Annual Report, which was submitted to the U. S. Office of Education 25 November 1969, outlined a conceptual basis for the operation of the Center for Occupational Education, and delineated the revised mission and goals of the Center. The conceptual basis for the operation of the Center is the model for education for occupational proficiency which defines the mission of occupational education in public schools. That is, the occupational education system will maximize the retention of students in the public school system, equip each student with saleable skills, interlock with the academic program, and provide continued access to training and retraining so that each individual will obtain an optimum level of work proficiency which is defined as a dynamic state. Attaining an optimum level of work proficiency for each individual is equivalent to maximizing career and personal development.

The mission and goals of the Center for Occupational Education have not been changed from those reported in the previous publication. The mission of the Center is:

> To contribute to the improvement of the quality and quantity of occupational education for all persons and groups in each community through research and related activity, thereby facilitating the implementation of the basic provision of the Vocational Education Act of 1963 and the Vocational Education Amendments of 1968.

Thus, the mission of the Center is to influence the improvement of occupational education and to implement the model for education for occupational proficiency. The resources of the Center, however, do not permit a frontal attack on all elements in the model. Hence four interim goals have been selected from the construct of the basic model. These interim goals are:

1. The development and implementation of comprehensive programs of occupational education in postsecondary institutions of the nation, designed to serve all persons and groups in each community who have completed high school or left prior to graduation and who are not enrolled in a four year institution of higher learning.

2. The development and implementation of programs of occupational education in educational institutions for persons in the formative years.

3. The improvement of programs of occupational education in the rural schools of the nation.

4. The development and implementation of models and systems for evaluating programs of occupational education.

The four goals define the four current programs of the Center, based on the Center's assessment of national priorities and needs. Additional goals may be specified as current goals are attained, priorities changed, or additional resources to the Center become available. The goals do not represent a continuum on the model for education for occupational proficiency. The first two goals relate to target populations and to educational levels. The last two goals relate to national problems that cut across all target populations and educational levels.

The selection of the first goal, leading to the conceptualization of the postsecondary program was in response to the rapid growth of postsecondary institutions in the nation, the changing character of the labor

force, the expanding clientele to be served, and the emphasis placed by Congress on the postsecondary level.

Several factors and conditions led to the selection of the second goal of the Center with addressment to the development of a program of occupational education for students in the middle grades. The Vocational Education Amendments of 1968, prefaced by the House and Senate Reports and the Report of the Advisory Council on Vocational Education, heralded a change in the significance of pre-secondary occupational education. Two of the five ideas for program development and expansion cited in the House Report were " . . . (3) prevocational orientation is necessary to introduce pupils to the world of work and to provide motivation, and (4) meaningful career choices are a legitimate concern of vocational education." Part D of the Act, Exemplary Programs and Projects," authorized Federal funds to develop models for expanded programs, such as " . . . those designed to familarize elementary and secondary school students with the broad range of occupations for which special skills are required and the requisites for such occupations." The next vocational education act conceivably could authorize support for vocational education at the pre-secondary level. Further, disadvantaged students, who generally are over aged for their grade level, are prone to terminate their education prior to entering the secondary school. Occupational education in the middle grades is an essential for these students.

The problem of increasing the accessibility of occupational education for persons in rural areas constitutes one of the more serious contemporary problems in occupational education. The problem was highlighted

in the report of the President's National Advisory Council on Vocational Education. The migration of relatively unskilled manpower from rural to urban areas adds to the plight of urban impacted areas. Further, the proportion of the rural population that is economically disadvantaged is greater than the proportion of the urban population that is advantaged. These factors and conditions, coupled with the intent to work closely with the Task Force on Vocational Education in Rural Areas in the Division of Vocational and Technical Education of the U. S. Office of Education, led to the designation of the improvement of occupational education in rural areas as a goal of the Center.

The fourth goal of the Center cuts across all levels of education. Program evaluation is the number one problem confronting vocational education. The current state-of-the art in program evaluation and the need for additional attention to the accreditation of occupational education dictates that research and development efforts be addressed to this problem. The significance of the problem is attested to in the House and Senate Reports and in the report of the Advisory Council on Vocational Education. The Vocational Education Amendments of 1968 mandates the development and implementation of an evaluation system. Further, systems of accreditation must be developed to legitimize the expenditures of Federal funds for vocational education.

The goals and priorities of the Center do not exhaust the significant work to be done. Goals and priorities will undergo constant review and revision. Once the Center completes its projected program in the middle grades area, for example, a research and development program for occupational education in the lower grades will be undertaken. The goals

selected by the Center, however, represent significant areas the development of which is required to facilitate the implementation of the Vocational Education Amendments of 1968.

The matrix of activities denoted by the target populations and major problem areas, defined as the four goals of the Center is shown below.

Goals	Target populations: Elementary	Middle grades	Secondary	Post-secondary	Adult
Major programmatic thrusts		X		X	
Rural problems	X	X	X	X	X
Program evaluation	X	X	X	X	X

PROGRAMMATIC DEVELOPMENTS

In the previous publication of the Center entitled Projected Activities for the Fourth Funding Period of the Center and Annual Report, it was pointed out that the project orientation of the Center, which characterized its early mode of operation, had been discarded, and that a programmatic approach to the research and development program had been adopted. The four goals of the Center define the major programs of the Center. These programs are designated in abbreviated form as the Postsecondary Program, the Middle Grades Program, the Evaluation Program, and the Rural Program.

Further development of the programmatic approach of the Center is described in the present publication. The programs of the Center have been divided into appropriate subprograms, each with its goal and set of objectives. The objectives of subprograms define the projects of the Center.

Center goals, therefore, define the programs of the Center, and programs are subdivided into subprograms. A goal has been defined for each subprogram, and objectives have been specified for each subprogram. The objectives are the bases for the projects of the Center, which, when completed, will lead to the attainment of the goals of the subprogram. When subprogram goals have been attained, other subprograms will be attacked through the personnel resources of the Center.

For purposes of budgeting, the work of the Center actually is divided into five programs. Program I relates to the Administration and Services of the Center, including editorial assistance and computer programming services. Programs II, III, IV, and V relate to the Postsecondary, Middle-Grades, Rural, and Evaluation Programs.

PROJECTED ACTIVITIES

This section of the Annual Report delineates the work to be accomplished by the Center during the Fourth Funding Period, ending June 30, 1971. The activities are described under five programs, which corresponded to the budget. The first program includes Program Planning, Administration, Coordination and Dissemination, Research Training, and Computer Programming and Editorial Assistance. The second, third, fourth, and fifth programs correspond to the four interim goals of the Center.

Program I

Program Planning, Administration, Coordination and Dissemination, Research Training, and Computer Programming and Editorial Assistance

The activities under Program I are described under the names of the personnel whose salaries are charged against the program.

1. John K. Coster, Director of Center

   a. Management and Administration. 25%

      The activities include program and project review; budget preparation, and administration; preparation of quarterly and annual reports; preparing and conducting meetings with the Center Technical Committee, the National Planning and Evaluation Advisory Council, and the Policy Coordination Boards; personnel administration and consultation; reviewing reports; and preparation of the Center-Com, the Center's newsletter.

   b. Services. 25%

      The service activities include the revision and publication of six occasional papers; the development of a model for the administration of Education Professions Development Program in vocational education at the state level for the Bureau of Personnel Development, U. S. Office of Education; consulting with the Committee on Occupational Education, Southern Association of Colleges and Schools in the development of its program of accreditation; conducting a seminar on research design; and providing other services as requested.

2. Charles H. Rogers, Coordinator of Services and Conferences

   a. Coordinator of Services and Conferences

      Coordinate and/or direct two conferences during the funding period, and direct the preparation of the final report. The two conferences to be conducted during this period are:

      (1) National Conference on the Initiation of a Planning, Programming, and Budgeting System in a State Division of Occupational Education.

      (2) National Conference on the Improvement of State-Level Policy Making.

3. J. K. Dane, Editorial Assistant to the Director

   Review and edit all final reports submitted to the Director for publication; assist the Director in the preparation of a brochure describing the program of the Center; assist the Director in drafting papers to be presented to seminars and conferences; supervise the publication of Center reports.

4. P. S. Vivekananthan, Computer Programmer and Management Assistant to the Director

a. Management Assistant

Conduct a project for the Center entitled "The Development of a Project Planning System for Education Research and Development Centers."

Special Administration Project

1. "The Development of a Project Planning System for Education Research and Development Centers" (Mr. P. S. Vivekananthan).

Objective. The objective of the project is to develop a system for selecting and allocating resources to programs, subprograms, and projects of the Center for Occupational Education which will maximize the probability of fulfilling the mission of the Center and maximize its influence on improving programs of occupational education in the nation.

The resources available to an educational research and development center generally are less than those required to attain all of the goals of the center, especially when the funding level of the center is less than the projected level. Decisions, therefore, must be made as to the specific projects to be undertaken at any given point in time. Further, alternative approaches to attaining goals must be considered. Then, too, goals of programs and subprograms of the Center for Occupational Education may vary in priority as to time and urgency, and this factor should be considered in the selecting of projects for the Center's program.

At any given point in time, the total potential national impact of the Center's program should be maximized. Such maximization dictates that the activities at any point of time have maximum utility in relation to costs. A program planning and budgeting system is needed for educational

research and development centers which results in the projects selected giving maximum impact for project costs.

The project will produce a product which will enable the Center to simulate its total program in terms of the maximum probable impact on improving occupational education in the nation. A system for weighting projects in relation to costs will be produced. Where the resources available to the Center permit a choice among several projects to be undertaken, the simulation procedure will enable the decision-makers to select the project with the highest cumulative value.

Description of Work During the Funding Period. The project will be completed and installed in the Center during the first quarter of FY 1971.

Program II

The Postsecondary Program

In the publication entitled Projected Activities for the Fourth Funding Period and Annual Report, the postsecondary program was conceived as a system, and the system was subdivided into five subsystems, including a planning and evaluation subsystem; a management and decision-making subsystem, a recruiting, classification, and counseling subsystem; a curriculum and instruction subsystem; and a placement and follow-up subsystem. Research and development projects of the Center were subsumed under each of the five subsystems of the postsecondary program.

During the past six months, a part of the resources of the Center has been directed toward the investigation of the Center as a system and toward an examination of the educational systems, the improvement of which the Center intends to influence. The result of this investigation has led

to the conclusion that the Center should investigate in detail the postsecondary occupational education institutions as a system, per se. Such activity is highly pertinent to planning, management, and evaluation, including the accreditation of postsecondary occupational education institutions.

Taking the general systems theory as a point of departure, it is logical to analyze a system into the following elements:

1. The total system performance
2. The system environment
3. The resources of the system
4. The components of the system
5. The management of the system

System performance has meaning in the context of three mutually dependent terms: mission, goals, and objectives. Mission is defined as the rationale for system activity. As such, mission is conceived in terms of the ultimate purpose of the system. The system implements the ultimate purpose (mission) through critical outputs performed over time and phases. Those outputs react with environmental states to produce outcomes which are the resultants of system-environment interaction. System goals are defined as desired outcome states over time and phases, whereas system objectives are defined states of system output. Those functions which assign utility (desirability) to outcomes are termed criterion measures.

System environment refers to those factors outside the system that influence system performance but which in turn cannot be immediately controlled by the system. In this sense, environment represents the constraints or parameters which constrain system activity and therefore affect

the attainment of system goals. Since by definition only system goals are functions of the environment, system output is not directly linked to environmental determination.

In contrast to environment, allocation and usage of system resources are directly under the control of the system. They represent the latent ability of the system to achieve its desired output states through control of the internal process operators. Action potential expended in areas not of ultimate concern to the system represent depletion of the action reservoir and lessen the likelihood of the attainment of system objectives and goals.

System components represent those sub-organizations of the total system that are functionally similar. These subsystems can be assigned component missions, goals, and objectives. Overall component significance is determined by the degree to which component performance is related to over-all system performance. If component performance is not related to over-all system performance then the component is not pulling its own weight and should be modified accordingly.

The necessity to monitor all system components in order to maintain internal unity of purpose requires a central control or management function wherein the previous aspects of the system--mission, goals, objectives, resources, environment, and components--are integrated in global system plans and strategies. The management aspect of the system enables a system to be self-adaptive in that structures that generated ineffective past performance are modified or deleted. Effective control of the total system requires an information and communication network

that is capable of providing information at the right time and place so as to provide optimal adjustment to meet external environmental conditions.

In light of the systems approach, the postsecondary program has been modified since the last report. Emphasis is placed on the local postsecondary system--on its management and operation and on its impact on students. Yet, it may be assumed that the local postsecondary institution is closely associated with the State system. Hence, research and development activities in the postsecondary program require attention to both the state system and the local system, in that the state system determines, in part the performance of the local system, serves as one of the environmental factors, and, to a greater or lesser extent, allocates its physical resources.

The projected activities for the fifth funding period are addressed to the state system and to the local system. The work to be performed in the state system is addressed to defining the parameters of the state system to provide a conceptual basis for the Center's continued program in the postsecondary area. With regard to the local system, a static model has been assumed, and the five subsystems listed above have been redefined into six subsystems: a management subsystem, a recruiting subsystem, a classification and counseling subsystem, a curriculum and instruction subsystem, a placement subsystem, and a follow-up subsystem. For purposes of program description, the matrix shown on the following page indicates the basis of the program and of the subprograms. Anticipated resources for the Center do not permit the full exploitation of the potential subprograms envisioned

for the Center. The emphasis during the funding period is on the state system as a whole, defined as the state postsecondary system subprogram, and on the following subprograms of the local system: the management subprogram, the recruiting subprogram, and the curriculum and instruction subprogram.

SYSTEM ELEMENTS BY SUBSYSTEM MATRIX

System Elements	State System	Subsystems of Local Systems					
		Management	Classification and Research	Counseling	Curricula and Instruction	Placement	Follow-up
Performance							
Environment							
Resource							
Components							
Management							

The State Postsecondary Occupational Education System Subprogram

Goal

The goal of the state system subprogram is to influence the process of postsecondary occupational education by developing models and systems for the planning, management, and evaluation of the state system of postsecondary occupational education.

Objectives

Two major objectives have been defined for guiding the activities of this subprogram during the current funding period:

1. To produce a report describing the developmental process of the postsecondary occupational education system, with emphasis on (1) the system's total performance, (2) the system's environment, (3) the system's components, (4) the system's resources, and (5) the system's management.

2. To produce a model or models of the postsecondary occupational education system in a state and to produce a model or models of postsecondary occupational education institutions.

Projects

1. The development of State Systems of Postsecondary Occupational Education (Dr. C. V. Mercer).

Objective. The objective of the project is given as Objective 1 above. The report produced will (1) provide a description of postsecondary occupational education now in operation in several states, and (2) describe the processes by which the various systems have been developed and instituted within each state.

This project sets the pattern for describing the postsecondary occupational education system. Following the elements of the general systems approach, the project will describe the system's performance in terms of the missions, goals, and objectives of the postsecondary system, and describe the clientele which the system is to serve. It will describe the environment of the system, with special emphasis on legal sanctions, enabling legislation, general legislation, and the motivational forces, including economic, political, social, and education, which have led to the development of the system. In addition, it will be concerned with the analysis of the parameters with the mechanisms by which power and influence are exercised to implement the system. It also will describe the constraints operating on the system. With regard to components, the project will lead to the description of the internal structure or subsystems of the system. Resources will be studied in terms of the fiscal, human, and physical resources available to the system, together with the system for the allocation of resources. Management refers to the central control or management function wherein the previous aspects of the system--mission, goals, objectives, environment, resources, and components--are integrated in global system plans and strategies, and the decision-making process through which these are effected.

The completion of the project not only will assist in the modeling of state postsecondary occupational education systems and in ascertaining the process by which national, state, and local goals are translated into programs, but the resultant report will be useful in the evaluation and accreditation of programs. National and regional accreditation, for

example, should be based on the public purposes to be served by a system, and these purposes may vary among systems. The results of the project serve as an input into a training program for state administrators of post-secondary occupational education programs.

Description of work during the funding period. Data have been collected from five states--North Carolina, South Carolina, Georgia, Florida, and Kentucky--for a pilot study of the development of post-secondary occupational education systems in a state. Further refinement and extension of the project will be effected during the funding period. The plans projected in this report provide for the elaboration and extension of the project to include the analysis of state systems according to the elements described above. The activities to be completed during the year include the development testing of data-collecting instruments, the try-out of the instrumentations in one selected state, the refinement of the instrument, and the collection of additional data from the five selected states.

2. The Development of a Model of Postsecondary Occupational Education Institutions (Director to be named. To be started as soon as funds are available.).

Objective. The objective of the project is given above. The major thrust of this project is to develop a conceptual model of postsecondary occupational education in a state educational system, and to develop a conceptual model of a postsecondary occupational institution, using the general systems theory approach, which is amenable to simulation. This project differs from Project 1, above, in that the latter is descriptive, whereas Project 2 is theoretical and idealized.

The utility of the project is to provide a means of examining the effects of alternate goals, policies, levels of funding, allocation of resources to programs, staffing patterns, and physical resources on student input and output. The development of the model would require a description of the attributes of potential users of postsecondary occupational education programs as an input into the model. It also would require a distinction of the attributes of the completers of the program. The implications for training the disadvantaged out-of-school population are highly significant. Alternate enrollment policies, for example, may be examined with reference to the probable effects of providing access for low-literate adults into occupational training programs. The probable costs of alternate enrollment policies also could be examined.

Through the use of dynamic programming, the resources required to attain alternate objectives may be computed, thus invaluable information could be provided to legislatures and other decision-makers. Implicit in the project is the application of the principles and techniques of operations research to the management of postsecondary occupational education programs at the state and local levels. Thus, the project would then provide invaluable data for forecasting personnel needs, to meet the requirements of Section 553 of the Education Professions Development Act, and physical resources for the state and local systems. The project is expected to yield valuable data for the improvement of evaluation and accreditation of occupational education.

Several projects which have been completed or are underway in the Center will contribute to the development of the project. The feasibility of simulation was demonstrated in a study entitled "Development of a Computerized Systems Model for Secondary Education."[1] A Center Research Monograph has been completed which draws attention to the implications of alternate allocations to curricular resources.[2] The projects underway dealing with the economics of occupational education,[3] the modeling of student flow,[4] the sources of information flow to prospective users of the postsecondary occupational education system,[5] and the study of policies in occupational education[6] will be used as inputs into the project.

Internal to the Center, the project will provide a more refined conceptual basis to be used in the continued development of both the postsecondary and evaluation programs of the Center by serving as an empirical basis for the allocation of Center resources to programs, subprograms and projects.

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[1]D. W. Drewes and T. S. Stallard, "Development of a Computerized Systems Model for Secondary Education." Unpublished Technical Paper, Center for Occupational Education, 1968.

[2]Robert M. Fearn, Labor Markets, Incentives and Occupational Education. Center Research Monograph No. 3. Raleigh: Center for Occupational Education, North Carolina State University, 1969.

[3]L. A. Ihnen and R. D. Robbins, "An Economic Study of Occupational Education in Community Colleges and Technical Institutes," Project No. 045, Center for Occupational Education.

[4]J. L. Wasik, "Modeling the Student Flow in Community Colleges and Technical Institutes," Project No. 048, Center for Occupational Education.

[5]C. V. Mercer, "Sources of Information and the decision Process for Attending Community Colleges and Technical Institutes." Unpublished Center Research and Development Report, Raleigh: Center for Occupational Education, North Carolina State University, 1970

[6]G. H. Beard, "A Design for Policy-Making in Occupational Education," Project No. 002, Center for Occupational Education.

Description of work during the funding period. Work will not be started until funds become available. During the first year of the project, the review of literature will be completed, and published as a monograph of the Center. The model for a postsecondary occupational education system in one selected state will be developed during the funding period. The parameters of the model will be defined. Data requirements, including manpower data, user attribute data, and cost analysis data, will be developed. A computer program for simulation will be written.

The Planning, Management, and Evaluation Subprogram

Goal

The goal of the planning, management, and evaluation subprogram is to improve the management of local systems of postsecondary occupational education with emphasis on costs and benefit analysis, adjusting curriculums in terms of student flow, and developing an informational system for decision-making.

Objectives

1. To develop a system for obtaining a continuous flow of data on costs and returns to occupational education at the postsecondary level which can be used to estimate costs and returns by curriculum.

2. To develop a working population flow model of students through postsecondary occupational education institutions.

3. To describe and model the systems in use in postsecondary occupational education institutions for obtaining, processing, using, and

disseminating economic and social information required in the management of the institution.

Projects

1. "An Economic Study of Occupational Education in Postsecondary Occupational Education Institutions" (L. A. Ihnen and R. D. Robbins).

Objective. The main objective of this study is to develop a system for obtaining a continuous flow of data on costs and returns to occupational education at the postsecondary level which can be used to estimate costs and returns by curriculum. This system will be developed in cooperation with a selected group of technical institutes and community colleges in North Carolina. The project includes three phases: Phase I is to develop that part of the system to generate returns. Phase II is to develop that part of the system to generate costs. Phase III is to develop that part of the system to estimate costs and returns by curriculum.

Most economic studies of occupational education have concentrated either on costs or on benefits. Such studies present only part of the analysis and are of limited use. Other studies that have considered both costs and returns have omissions that affect their applicability. These omissions include failure to consider differences in costs by regions of the country, failure to estimate returns to occupational education by program or curriculum, and failure to make provisions for a systematic and periodic follow-up study.

Description of work to be accomplished during the funding period. During the first quarter of FY 1971, an interim report of the project will be prepared, control group and cost data will be collected, and data on 1965, 1966, 1967, and 1969 graduates of the selected institutions will be collected. During the funding period, the data collection will have been completed, and the analysis of data begun.

2. "The Application of Mathematical Modeling Procedures to Projecting Curriculum Enrollments and the Study of Student Flow Between Curriculums of Community Colleges and Technical Institutes" (J. L. Wasik).

Objective. The objective of this study is to develop a working population flow model of students through postsecondary occupational education institutions. It is expected that the final outcome of the project will be a mathematically derived model that will provide estimates of curriculum enrollment by institutions. It is also expected that by the inspection of collected data on the present status of the enrollment by community colleges and technical institutes, trends in student flow between programs of groups with specific demographic characteristics can be detected.

Description of work during funding period. A working paper describing the mathematical models to describe student flow through postsecondary occupational education institutions will be completed and published as a technical paper of the Center during the first quarter of FY 1971. The collection of data for the project will be completed during the funding period.

3. "Information Systems in Postsecondary Occupational Education Institutions" (Dr. J. C. Matthews, Jr.).

Objective. The main objective of the project is to describe and model the system in use in postsecondary occupational education institutions

for obtaining, processing, using, and disseminating economic and social information required in the management of the institutions. Subsidiary objectives are (1) to identify the principal problems involved in securing, analyzing, and otherwise managing the information, and (2) to make recommendation for the improvement of the information system.

Execution of the project will yield these procedures: (1) an illustrative model and description of the main elements involved at institutional levels in obtaining and disseminating essential labor market and other kinds of information required in managing the postsecondary occupational education institution, (2) the identification and analytical discussion of the principal exchange procedures and problems reported in the management of these problems by program administrators in 50 North Carolina institutions, and (3) conclusion as to desirable changes in exchange and management procedures.

Description of work during the funding period. The preliminary draft of the final report of the project has been completed. The report will be revised and published during the funding period.

The Recruitment Subprogram

Goal

The goal of the recruitment subprogram is to develop a recruitment system for postsecondary occupational education institutions which will enable the institutions to attract a wider clientele, especially from the disadvantaged population, to postsecondary occupational education institutions.

Objectives

1. To complete a pilot study which is designed to answer questions regarding (1) knowledge of postsecondary occupational education institutions, (2) the perception of the system as having relevance to the users, (3) the perception of the probability of success in the system, and (4) the perception of probable employment outcomes which warrant efforts of participation and the foregone alternatives.

2. To determine the information content that will attract potential but current nonusers of postsecondary occupational education institutions to these institutions.

3. To develop and test a recruitment system for postsecondary occupational education institutions that will attract a wider range of clientele, including the disadvantaged, to these institutions.

Projects

1. "Sources of Information in the Decision Process for Attending Community Colleges and Technical Institutes," (Dr. C. V. Mercer).

Objective. See Objective 1 above.

Description of Work During the Funding Period. The preliminary draft of the report of the project was completed during the preceeding funding

period. The report will be reviewed, revised, and published during FY 1971.

2. "A Study of the Potential but Nonusers of Postsecondary Occupational Education Institutions," (Drs. C. V. Mercer and C. E. Lewis).

Objective. The objective of the project is to determine information content that will attract potential but current nonusers of postsecondary occupational education institutions to these institutions. The study will attempt to determine (1) why present channels of communication are not reaching these people; (2) what channels of communication will reach them; (3) why is present information content not attracting them to programs; and (4) what information content will attract them to the programs.

The main objective of the project is to develop a plan of information dissemination for use in postsecondary occupational education programs which will include the appropriate channels and content of communication for effectively reaching various segments of the population with particular emphasis on those groups which are not taking advantage of the population. Hence, attention is addressed to identifying the nonusers of postsecondary occupational education institutions in the potential population, and to ascertain the information which would alter their behavior patterns. The potential users must (a) know of the system, (b) perceive it as having relevance for them, (c) perceive the probability of success in the system, and (d) perceive a probable employment outcome which warrants the effort of participation

The area is aimed at developing information needed to increase the involvement of a larger portion of the population in occupational education programs to the end that it can be reasonably expected that because of occupational education more and more people can be expected to have career

fields (that employment characterized by personal development and advancement) rather than a series of unrelated "dead end" jobs. The accomplishment of this will entail four points of interest. First, there must be a social environment which makes the use of occupational education an attractive and desirable choice for those who may benefit from them. This will involve some assessment of the present social environment and the determination of needed changes with recommendations for the accomplishment of such changes. Secondly, the potential user populations (with an emphasis on the plural) must be informed and motivated to make use of programs. This leads to the third and fourth interests. Third, programs must be planned and conducted in such ways that they are in fact capable of attracting and holding students. Finally, the endurance of influence requires that programs do in fact make a difference in the work careers of students.

Specific action and professional development activities will be dictated by the ongoing progress of the program. Activities will center around public relations, information dissemination and recruitment, program image formation and work performance and satisfaction. The improvement of occupational education will require action addressed not only at programs themselves but the community in general and employers of the programs' products. The development of these activities should indicate certain personnel requirements for the professional staffs of occupational education institutions and potentially for personnel and supervisory staffs of industry.

The ultimate goal is to identify those environmental factors which facilitate the development of and use of programs of occupational education; and to assist in the planning and implementation of programs which will create and sustain such environments. The long-range goal is to

develop a plan of information dissemination, for the use of postsecondary occupational education programs, which will include the appropriate channels of and content of communication for effectively reaching various segments of the population with particular emphasis on those groups which are not now taking advantage of the system.

The breadth and ambitiousness of this preclude the presentation of an exhaustive listing of projects. Planning to this point indicates the following needs:

(a) A study of the information-decision process effectively operating among students now in programs;

(b) a study of identifiable nonuser populations to determine what information system would effect behavioral changes in these populations. Specifically identified are disadvantaged college leavers, persons in "dead end" occupations, persons in occupations and industries facing obselescence. These are studies which should be appropriate to research interns;

(c) because success is the most effective communicator, it should be determined if present programs do in fact make a difference in employment experience of graduates. A comparative study of work experience of graduates and nongraduates is being planned in one of the intern programs.

Experience has indicated that the research process generates more questions than answers. No attempt will be made to anticipate these questions. Suffice it to say, it is believed that the requirements of the broad area should be pursued as they are identified.

Description of Work During the Funding Period. The study will be conducted in nine North Carolina counties. During the first quarter of

FY 1971, a preliminary survey will be made of the nine counties to be included in the study, and contact will be established with agencies and persons having access to the "nonuser" population. The remainder of the funding period will be devoted to the preparation of data collection instruments and the design of the sample. These activities will involve consultation with public information specialists and with persons who are involved with the disadvantaged for assistance in questionnaire construction and data collection procedures. The activities also will include obtaining materials necessary for the area sample, including aerial photographs, county culture maps and Bureau of Census enumeration district data.

3. "The Development of a Recruitment System for a Postsecondary Occupational Education Institution."

This project will not be started until the next funding period.

The Curriculum and Instruction Subprogram

Goal

The goal of the curriculum and instruction subprogram is to develop a conceptual framework for describing the world of work and a system for measuring the characteristics of occupations in relation to measurable human attributes. Such a system could prove useful in the following areas: (1) the matching of students and careers; (2) the counseling, classification, and placement of students in occupational education based upon their measured attributes in relation to occupational requirements; (3) the development of curricula based upon systematic analysis of occupations; and (4) the evaluation of occupational programs.[1]

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[1]As the goal of this subprogram connotes, the scope extends beyond the curriculum and instruction subsystem in the postsecondary system. The

Objectives

1. To develop a system for defining, measuring, and combining job variables relevant to occupational education. This will include the construction of a job-analysis instrument (the Occupation Analysis Inventory).

2. To derive from the above system a set of basic work dimensions.

3. To determine the relationships between the variables and dimensions measured by the OAI and measurable human attributes in the cognitive domain (i.e., selected aptitudes and general vocational capabilities).

4. To determine the relationships between the OAI variables and dimensions and measures of human attributes in the affective domain (i.e., selected interests and needs).

5. To revise the OAI based on the results of the preceding stages of the program.

6. To develop occupation-cluster or work dimension curricula based on the types of information input, behavioral output, goals, environmental context, and general vocational capability requirements typical of occupations within clusters or job elements defining basic work dimensions.

7. To develop systems for the counseling, classification, and placement of students in occupational education programs and in jobs on

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subprogram described herein has implications for all target populations to be served by occupational education. Further, the subprogram relates to manpower information in that it is directed toward the characterization of jobs in a manner somewhat analogous to the way individuals are now characterized by psychometricians. And it impinges directly upon the classification and counseling of students at all levels. The subprogram is basic to the three elements in the model for education for occupational proficiency: changing attributes of the occupational demand structure, changing attributes of the individual, and curriculums based on occupational information and societal demands modified by the individual attribute system.

the basis of their aptitudes, interests, and other measured attributes in comparison with the attribute requirements of the occupations in question.

8. To evaluate occupational curricula based upon (a) comparative analyses between the curricula and the occupations for which the curricula were designed, and (b) the performance of graduates from these curricula.

Projects

1. "The Study of Job Commonalities Relevant to Occupational Education," (Dr. J. W. Cunningham).

Objective. The objectives of this project are (1) to develop a conceptual framework, based upon concepts and principles of learning transfer and psychometrics, for defining the common denominators of jobs; (2) to construct a job-analysis instrument (the Occupation Analysis Inventory) to be used for the study of job similarities; and (3) to conduct a tryout and validation of the job-analysis instrument.

This project is expected to yield data which may be used in modifying postsecondary and secondary curriculums. The initial phase is a basic development project in the area of "ergometrics" which requires the development of models, methodologies, and measurement techniques.

Description of Work During the Funding Period. Two samples of 400 occupations will be rated on the Occupational Analysis Inventory. The ratings of these occupations will be completed by October, and factor analyses of the OAI items based on these ratings will be completed by the end of the funding period.

The Occupational Analysis Inventory items will be rated on 100 human attributes, including general vocational capabilities, aptitudes,

psychomotor abilities, and affective variables (i.e., interests and needs) by ten judges. Attribute requirement weights will be derived for each OAI item, and these weights will be incorporated into a scheme for estimating human attribute requirements of occupations analyzed with the OAI. The OAI-derived attribute requirement scores for a sample of occupations will be correlated with USES ratings of the same occupations on aptitudes and motor abilities. The OAI items will also be factor analyzed on the basis of attribute ratings. These activities will be completed during the first quarter of FY 1971.

Students enrolled in various vocational and technical curricula will be administered Altman's General Vocational Capabilities test. Approximately 50 occupations and corresponding curricula will be selected for this purpose. The average general vocational capabilities scores of students in various occupational curricula will then be related to the OAI dimension scores of the occupations in question. This phase of the project will be completed by the fourth quarter of FY 1971.

The completion of four reports is projected for FY 1971:

(1) The Development of an Occupational Analysis Inventory.

(2) The Relevance of Job-Analysis to Problems in Occupational Education: A Review of the Literature.

(3) Human Attribute Requirements of Measurable Job Variables: Further Development of the Occupational Analysis Inventory.

(4) Systematically Derived Occupational Dimensions: A Study of the Occupational Analysis Inventory.

2. "The Relationship Between Occupation Analysis Inventory Dimensions and Aptitude Test Scores," (Mr. J. R. Floyd).

Objective. The objective of this project is to ascertain the relationships between the variables measured by the job-analysis instrument (Occupational Analysis Inventory) and the measurement of human attributes in the cognitive domain.

Description of Work During the Funding Period. The development of the model for the project will be completed during the funding period. The project is scheduled for completion during the first quarter of FY 1972.

3. "The Relationships Between Occupational Analysis Inventory Dimensions and Selected Affective Measures," (Mr. T. C. Tuttle).

Objective. The objective of the project is to ascertain the relationships between the variables measured by the Occupational Analysis Inventory and measures of human attributes in the affective domain.

Description of Work During the Funding Period. The development of the model for the project will be completed during the funding period. The project is scheduled for completion during the first quarter of 1972.

Program III

The Middle Grades Program

The rationale for including this program in the total program of the Center was presented in the document entitled Projected Activities for the Fourth Funding Period and Annual Report. The Vocational Education Amendments of 1968, prefaced by the House and Senate Reports, and the report of the Advisory Council on Vocational Education, heralded a change in the significance of pre-secondary occupational education. Two of the five ideas for program development and expansion cited in the House Report were " . . . (3) prevocational orientation is necessary to introduce pupils to the world of work and to provide motivation, and (4) meaningful career choices are a legitimate concern of vocational education." Part D of the act, "Exemplary Programs and Projects," authorizes Federal funds to develop models for expanded programs, such as "those designed to familiarize elementary and secondary school students with the broad range of occupations for which special skills are required and the requisites for such occupations for which special skills are required and the requisites for such occupations." The next vocational education act conceivably could authorize financial support for instructional programs at these levels. In anticipation of such an event, models for programs to be supported at these levels must be developed.

Current emphasis on disadvantaged students dictates that increased attention be given to occupational education in the middle grades. These disadvantaged students generally are over-aged, and many youths drop out of school upon the completion of the middle grades phase, at the eighth or

ninth grade. If students are to be retained in school so that they can obtain appropriate job skills, then it is imperative that (1) strategies for retaining youth in school be developed, and (2) that where strategies fail, alternate plans for providing occupational education to these youth be made available.

A reasonable approach to resolving the problem of reducing the drop-out rate in the middle grades, retaining youth in school for skill training, and providing an appropriate career development program for youth prior to entering the secondary school is to modify the curriculum to articulate occupational education with academic education, and to articulate these programs with programs of career and occupational development. Hence, as was stated in the document entitled, Projected Activities for the Fourth Funding Period and Annual Report:

"The attainment of this interim goal requires a reexamination of the total middle grades program with emphasis on the articulation between career decisions, employment opportunities, and the preparation for employment. The crux of the problem is the orientation of the curriculum in the middle grades, especially with regard to the relevance of general education to occupational needs and demands. But subsidiary problems are encountered, including the information system of pre-secondary students and the process by which students with diverse attribute systems receive occupational process, and act upon information. Orientation, in itself, is hypothesized to be inadequate to accomplish this end. The problems are rooted in the total attribute and value system and they defy simple solutions such as the addition of more practical arts courses

to the curriculum. Integration and articulation not addition of separate entities, are the key approaches to be utilized in the attainment of this interim goal."

The Middle Grades Program of the Center has been divided into two subprograms. The first of these is labeled "Basic Studies." The second subprogram is "Curriculum Development."

The Basic Studies Subprogram

Goal

The goal of the basic studies subprogram is to identify and specify career and occupational development behavioral objectives and to develop instruments to measure these behaviors.

Objectives

1. To identify and specify career and occupational development behavioral objectives.

2. To construct, try-out, and validate instruments to measure career and occupational development behaviors.

Projects

1. "The Construction and Validation of Measures of Vocational Maturity" (Dr. B. W. Westbrook).

Objective. The objective of this project is identical to the two objectives listed for the subprogram. That is, the objective of the project is to identify career and occupational development behaviors and to construct, try-out, and validate measures of the hypothesized dimensions of vocational maturity.

This project was undertaken in response to the need for instruments which can be used in determining a student's readiness for making vocational

decisions, determining readiness for various types of vocational experiences, and evaluating the effects of various types of vocational experiences. In the development and execution of the project, it became apparent that the career and occupational development behaviors must be identified and specified prior to constructing instruments to measure these behaviors. Therefore, the research activities have been directed toward the development of specifications for vocational maturity measures and writing statements of career and occupational development behaviors which can be used as the basis for the construction of test items. The test items are grouped according to the variables they purport to measure and the various statistical procedures are used to insure that the theoretical sorting of items into groups results in groups of items which are highly interrelated from a statistical point of view. In addition to establishing the rational and empirical validity of the item grouping, the test will be administered to a random sample of students at various grade levels to determine if the mean score on each test increases monotonically with grade level of students.

Description of Work During the Funding Period. A monograph on career and occupational development behaviors will be published during FY 1971. The development of the preliminary form of the vocational maturity measure has been completed. During the funding period, the development of the final forms of the measure will be completed and the form will be administered to a sample of students.

The Curriculum Development Subprogram

Goal

The goal of the curriculum development subprogram is to produce a curriculum for occupational education in the middle grades which will maximize the articulation between academic and occupational education, increase retention in school, improve motivation, maximize alternatives to students of diverse social and economic backgrounds, and facilitate career and occupational development.

Objectives

1. To produce an operational planning and product evaluation model for the middle grades occupational education program.

2. To produce a curriculum for the middle-grades occupational education program.

Program IV

The Rural Program

Factors and conditions that led to the designation of the problem of increasing the accessibility of occupational education for persons in rural areas as one of the major problem areas of the Center were cited in the Introduction of this report. From its inception, the Center has been concerned with improving the quality and quantity of occupational education in rural areas. One of its major early projects, "Occupational Education in Areas in Social and Economic Transition," dealt with the problems of adjustment created by the transition from a predominately agrarian economy to a more diversified, industrial economy. The Center

has completed the evaluation of a project entitled "Concerted Services in Training and Education in Rural Areas," the overall purpose of which was to seek ways of increasing the availability of occupational education programs to persons in disadvantaged rural areas. The Center also has completed a project and published a report entitled Teenage Unemployment in Two Selected Rural Counties in the South, which further stressed the need for increasing the availability of occupational education in rural areas which is appropriate for contemporary American Society. Recently, the Center has undertaken the management and evaluation of a project entitled "National Inservice Multiple Institutes for Vocational and Related Personnel in Rural Areas," with an additional grant from the National Center for Educational Research and Development, U. S. Office of Education, to provide inservice training for 545 professional personnel in vocational education to improve the quality and quantity of vocational education in rural areas. The Center also has developed a model exemplary program for vocational education in a rural school system at Apex, North Carolina which provides a vehicle for implementation of the model for education for occupational proficiency.

The overall purpose of the rural program is to improve the management system of occupational education in rural areas of the nation in order to provide more adequately for disadvantaged youths and adults in these areas. The following are the areas of concern with which the program will deal:

1. To develop and test models for more effective use of occupational resources within small rural schools.

2. To develop and test model programs for sharing occupational resources among small schools.

3. To develop programs for those students who must migrate for employment.

4. To influence change in policies for financing vocational education in rural areas.

5. To develop training packages for rural education personnel designed to facilitate the implementation of new occupational programs for rural areas.

Training Subprogram

Goal

The goal of the training subprogram is to provide inservice training to leadership personnel in vocational and related personnel in the nation directed toward the implementation of the concepts expressed in the Vocational Education Amendments of 1968 in rural areas.

Objectives

1. To provide inservice training to 545 leadership personnel in rural areas in order to facilitate the improvement of occupational education in rural areas.

Projects

1. "National Inservice Multiple Institutes Program for Vocational and Related Personnel in Rural Areas" (Dr. C. H. Rogers).

Objective. The overall objective of the project is stated above. More specific objectives are (1) to produce a training package to train 545 personnel in vocational education and related personnel in the

implementation of the Vocational Education Amendments of 1968 in rural areas, (2) to conduct seven institutes during 1970, (3) to produce elements of new models for developing more relevant programs of occupational education in rural areas, and (4) to develop procedures for instituting planned change within states represented by the participants. The management and evaluation of the project is an activity of the Center's services and conference program. The project is being conducted with an additional grant.

Description of Work During the Funding Period. By January 31, 1971, the following activities will have been completed:

1. The seven institutes will have been conducted.

2. Final reports of each of the seven institutes will have been written.

3. The follow-up visitation program and on site evaluation to be conducted in 40 states will have been started.

Problem Identification Subprogram

Goal

The goal of this program is to isolate the major problems and issues of providing more adequate programs of occupational education in rural areas.

Objectives

1. To produce a report designed to summarize the significant problems of providing more adequate programs of occupational education in rural areas.

Projects

1. "The Identification of Major Problems in Providing Occupational Education in Rural Areas." (Dr. C. H. Rogers).

Objective. The objective of the project is given above. Prior to conducting the multiple institutes project described above, personnel in state divisions of vocational education were visited and interviewed in order to identify and isolate the problems of providing more adequate programs of occupational education in rural areas to which attention should be given in the multiple institutes. The results of the interviews which were conducted in the 48 contiguous states will be summarized in the report.

Description of Work During the Funding Period. A report entitled "Rural Occupational Problems as Viewed by State Directors of Vocational Education" will be completed and published during the funding period. This report will be used as the basis for delineating further the subprograms, goals, and projects.

Program V

The Evaluation Program

The evaluation program of the Center converges a number of activities of the Center into a frontal attack on the goal of the development and implementation of models and systems for evaluating programs of occupational education and on the attendant problem of developing a system of accountability for fiscal and human resources inputs. Early in its history the Center produced a monograph entitled Citizen Evaluation of Public Occupational Education,[1] which set forth a rationale for the evaluation of occupational education based on American ideals and values. In 1968, the Center cooperated with the Center for Vocational and Technical Education at the Ohio State University and with the Research Committee of the American Vocational Association in sponsoring the "National Seminar on Research in Evaluation of Vocational Education," which examined the issues of evaluation in occupational education. The models generated at the Seminar were used as inputs into an occasional paper entitled The Role of Evaluation in the Decision-Making Process,[2] which presented a preliminary model for the evaluation of occupational education, and related it to a subjective expected utility model. More recently, the preliminary model was expanded and interfaced with the model for education for occupational proficiency in a paper

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[1] H. M. Hamlin, Citizen Evaluation of Public Occupational Education. Center Monograph No. 1; Raleigh; Center for Occupational Education, North Carolina State University, 1967.

[2] John K. Coster and Robert L. Morgan, The Role of Evaluation in the Decision-Making Process. Center Occasional Paper No. 5; Raleigh; Center for Occupational Education, North Carolina State University, 1969.

entitled "A Holistic Approach to Evaluating Occupational Education with Implications for Accreditation."[1] This paper presents a dynamic model for the evaluation of programs of occupational education, and demonstrates the linkage between goals, product objectives, process objectives, and program outcomes. Projected plans provide for the publication of a second monograph on program evaluation during the funding period which will feature further refinements of the model for evaluating programs of occupational education.

A number of other projects in the Center relate directly to program evaluation. The evaluation of the project entitled "Concerted Services in Training and Education in Rural Areas," which was sponsored by the Interdepartmental Task Force on Concerted Services in Training and Education in Rural Areas, recently was completed by the Center.[2] This project demonstrated the utility of a dynamic model in increasing the accessibility of educational programs to rural people living in economically depressed areas. Two other projects of the Center, which are in the preliminary draft stage, bear directly on program evaluation. The project entitled "A Design for Policy-Making in Occupational Education," will include a set

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[1] John K. Coster and Robert L. Morgan, "A Holistic Approach to Evaluating Occupational Education with Implications for Accreditation." Unpublished Occasional Paper; Raleigh: Center for Occupational Education, North Carolina State University, 1970.

[2] B. Eugene Griessman, Planned Change in Low-Income Rural Areas: An Evaluation of Concerted Services in Training and Education. Center Research Monograph No. 2; Raleigh: Center for Occupational Education, North Carolina State University, 1969

of criteria for evaluating policies of occupational education.[1] The project entitled "The Problem and Process of Initiating a Program Planning and Budgeting System in an Occupational Education System" bears on the issue of accountability.[2]

The instruments to be produced as the product of the project entitled "The Construction and Validation of Measures of Vocational Maturity" are expected to be useful in determining the extent to which career and occupational development behaviors have been attained through career and occupational development programs in the middle and secondary programs.[3] The project entitled "The Study of Job Commonalities Relevant to Occupational Education" is expected to result in curriculum evaluation studies.[4] The project entitled "An Economic Study of Occupational Education in Community Colleges and Technical Institutes" is expected to produce a system for assessing costs and returns to occupational education.[5]

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[1]H. G. Beard, "A Design for Policy-Making in Occupational Education," Project No. 002, Center for Occupational Education.

[2]R. T. Williams, "The Problem and Process of Initiating a Program Planning and Budgeting System in an Occupational Education System," Project No. 048, Center for Occupational Education.

[3]B. W. Westbrook, "The Construction Validation of Measures of Vocational Maturity," Project No. 023, Center for Occupational Education.

[4]J. W. Cunningham, "The Study of Job Commonalities Relevant to Occupational Education," Project No. 044, Center for Occupational Education.

[5]L. A. Ihnen and R. D. Robbins, "An Economic Study of Occupational Education in Community Colleges and Technical Institutes," Project No. 045, Center for Occupational Education.

During the past year, the Center launched into the first of a series of research and development activities directed toward the improvement of the accreditation of occupational education. Although research and development activities in the area of accreditation was cited as one of the possible areas of activity of the Center in its continuation proposal, the impetus for the activity came primarily through the joint efforts of the Center and the Southern Association of Colleges and Schools and also resulted from the activities of the Southwide Research Coordinating Council on Occupational Education. The first publication of this area entitled, "The State of Accreditation and Evaluation of Postsecondary Occupational Education in the United States"[1] is in preliminary draft form and will be published during the funding period.

The evaluation program is divided into two subprograms; the program evaluation subprogram and the accreditation subprogram. The goal of the program evaluation or subprogram is to develop and install an evaluation system for state and local programs of occupational education. Initial attention will be given to the evaluation of programs at the state level in light of the urgency of providing an evaluation system for use by state advisory councils for vocational education. The goal of the second subprogram is to improve the reliability and validity of the accreditation of occupational education. The second subprogram will be interlocked with the first, and also with the post-secondary program of the Center.

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[1]Charles F. Ward, "The State of Accreditation and Evaluation of Postsecondary Occupational Education in the United States," Unpublished Research and Development Report; Raleigh: Center for Occupational Education, North Carolina State University, 1970.

Program Evaluation Subprogram

Goal

To develop and install an evaluation system for state and local programs of occupational education.

Objectives

1. To develop a model for the evaluation of occupational education.

2. To identify the evidence needed by decision makers to ascertain that the national goals for occupational education have been attained.

3. To describe the process by which decisions affecting occupational education are made and policies executed.

4. To develop and install a system for the evaluation of programs of occupational education at the state level.

5. To develop and install a system for the evaluation of occupational education at the local level.

Projects

1. The Development of a Mpdel for the Evaluation of Occupational Education (Dr. J. K. Coster and Mr. R. L. Morgan).

Objective. The objective of this project is to develop a model for the evaluation of occupational education and to link the model for evaluation with the model for education for occupational proficiency.

Description of Work During the Funding Period. Two papers on the model for evaluation of occupational education have been published. A monograph on program evaluation will be published during the funding period.

2. "Evidence Required to Demonstate Attainment of National Goals for Occupational Education" (Dr. B. E. Griessman).

Objective. The objective of this project is to produce a report describing the expectations of national decision-makers with regard to national investments in occupational education and the evidences required to demonstrate that these expectations have been met. The allocation of Federal funds to occupational education carries with it an implied responsibility to produce evidence that such allocations are justified. The criteria of evidence vary among levels of decision-making and program administrations. Inasmuch as the goals of occupational education are based to a very great degree on legislative intent, it seems reasonable to assume that national goals and the requirements of evidence to demonstrate that goals have been attained be an integral part of the state and local evaluation programs. A great deal of information presently is being collected by various organizations but little or any attention has been given to the problem of discovering just what kind of information is most urgently needed. More specifically, this project will attempt to discover not only what information decision-makers indicate is needed, but also the project will attempt to determine what actually is done with the information that is gathered. Among other things the investigation should shed some light on which of two models is more appropriate in predicting the responses of decision-makers, the "rational man model" or the "political man model."

Description of Work During the Funding Period. The rationale for the project will be developed, the interview guides will be prepared, the interviewers will be selected, and interviewing will be started.

3. The Development and Implementation of a Design for Policy-Making in Occupational Education (Dr. H. G. Beard).

Objective. The objective of this project is to produce a product that will improve the policy and the decision-making process for occupational education at the state level. The model of policy making will be constructed in the form of an evaluative device to be used by policy makers. Specific attention will be given to the formulation of goals by policy-makers and the process by which goals are attained. The various components and their interrelationships which comprise the model for policy-making will be described in terms of evaluative criteria and standards.

The design for policy making identifies two classes of problems that confront the decision-makers at the state level. The first problem is that of identifying the substantive problems in the society, choosing pragmatic solutions to these problems, and deciding how program results will be evaluated in the developmental or change-over-time sense. The second problem is that of designing and constructing a policy-making system that has the capacity and maintenance inputs required to make efficient and progressive decisions in the substantive problem areas in the first problem area. Thus, the project will examine the relationship of societal values to goals and to the development of policy.

Description of Work During the Funding Period. The design for policy making will be published during the first quarter of FY 1971. A national conference on improving policy-making in occupational education will be held and the report of the conference will be published during the funding period. Consultation on the improvement of the decision-making process in occupational education will be provided. The model for policy making will be interlocked with the model for evaluation

and the model for education for occupational proficiency.

4. "The Problem and Process of Initiating a Program Planning and Budgeting System in an Occupational Education System (Dr. R. T. Williams).

Objective. The objective of this project is to produce a report depicting the process and procedures employed in initiating planning, programming, and budgeting systems in a state division of vocational education. The project cuts across all occupational education programs. Although primarily directed toward the state level, the principles developed are expected to have implications for program planning and budgeting at the local level.

Description of Work During the Funding Period. The report of the project will be completed during the funding period. A National Conference on the Initiation of a Planning, Programming, and Budgeting System in a State Division of Occupational Education will be held during the funding period, and the report of the conference will be published during the period.

5. "The Development and Implementation of Evaluation System for Occupational Education in a Selected State" (Drs. J. K. Coster, H. G. Beard, R. T. Williams, J. C. Matthews, Jr., Mr. R. L. Morgan).

Objective. The objective of this project is to produce a system of evaluation of occupational education in a selected state, based on the model for evaluation of occupational education, and to install the system in the selected state. The system will meet the following specifications:

(1) The system will meet the requirements specified for the evaluative function of the State Advisory Council for Vocational Education in the Vocational Education Amendments of 1968.

(2) The system will be capable of generating continuous data for evaluative purposes, and will provide a basis for the continuous evaluation of occupational education with feedback into policy determination and decision-making processes.

(3) The system will provide for a continuous appraisal of goals, objectives, and priorities, and will provide the mechanism by which evaluative data may be obtained to make these appraisals.

(4) The system will link policy decisions with program operation, and will provide a basis for the evaluation of policy and for the linking of program operation with policy.

(5) The system will be management oriented, and will provide the data for managerial decisions.

(6) The system will link manpower needs of the state with the potential personnel who may be trained to meet these needs.

(7) The system will be capable of being installed with minimum manpower required to operate and maintain the system.

Description of Work During the Funding Period. The project will be completely conceptualized during the funding period. Data requirements will be determined, and instruments for collecting data will be prepared.

Accreditation Subprogram

Goal

To improve the reliability and validation of the accreditation of programs of occupational education.

Objectives

1. To produce a report describing the "state-of-the-art" of accreditation of occupational education in the United States.

2. To develop and test standards for the accreditation of occupational education.

Projects

1. The State of Accreditation and Evaluation of Postsecondary Occupational Education in the United States," (Dr. C. F. Ward).

Objective. The objective of the project is to produce a report depicting the "state-of-the-art" of accreditation in occupational education. The specific objectives are:

1. To gather, synthesize and analyze data from the various regional and specialized accrediting agencies and associations in regard to: (a) scope of their activities in postsecondary occupational education; (b) the administrative structure under which accreditation of occupational education is effected; (c) philosophy of accreditation; (d) clientele and membership; and (e) the standards and evaluative criteria utilized to evaluate postsecondary institutions offering occupational education.

2. To ascertain the extent to which the federal government is engaged in activities of an evaluative or accreditative nature within the realm of postsecondary occupational education and to analyze available

studies, standards, regulations or statutes affecting evaluation of post-secondary occupational education.

3. To gather, synthesize and analyze data concerning the extent to which the various states are engaged in the evaluation or accreditation of postsecondary occupational education and to ananlyze standards and evaluative criteria used.

4. To determine the extent to which the various states or public institutions within a state are participating or seeking membership in the regional and specialized accrediting agencies.

5. To determine the extent to which federal, state, or local licensing may be a factor in the evaluation of occupational education.

6. To assess the opinions of state officials responsible for vocational education or the operation of state systems of postsecondary area vocational schools, technical institutes, or community colleges regarding: (a) the adequacy and pertinence of standards and evaluative criteria used by accrediting agencies to evaluate postsecondary occupational education; (b) the adequacy of specialists in occupational education on association staffs and visitation teams; (c) whether administrative structures of regional associations are conducive to adequate and fair evaluation of postsecondary occupational education.

Description of Work During the Funding Period. The preliminary draft of the report has been completed. The final report will be published during the funding period. A national conference on accreditation of post-secondary occupational education was held in Atlanta in June, and the report of this conference will be published during the funding period.

2. "The Development of Standards in Occupational Education," Dr. C. F. Ward).

Objective. The objective of this project is to develop standards for accreditation of occupational education, and to test the standards for criteria of reliability and validity.

The scope of the project includes (1) the development of broad standards for the various aspects of an institution's operations which relate to postsecondary occupational education and (2) the subsequent development of specific evaluative criteria designed for indepth measurement of the broad standards. Tentative areas for which standards should be developed are: (1) philosophy and objectives; (2) policy and administration; (3) educational programs; (4) the instructional program; (5) faculty and staff; (6) student personnel services; (7) placement and follow-up of graduates and nongraduates; (8) financial resources; (9) facilities and equipment; (10) learning resources center; and (11) institutional relationships. To the extent that existing standards satisfy requirements as to relevance, objectivity, and adequacy, they will be used. Where these conditions are not met, additional standards will be developed. Once the broad standards have been developed, the development of specific criteria which assess the various facets of each standard will be undertaken. Care will be taken to insure that each criterion possesses the objectivity necessary for adequate interrater reliability.

Description of Activities During the Funding Period. The conceptualization of the project will be completed during the funding period. The conceptualization will include a review of the literature to ascertain techniques available for the assessment of standards and criteria. Committees will be formulated in such areas as policy making, administration, instruction, student personnel services, and learning resources

to assist in the evaluation of standards and the development of standards and criteria that meet reasonable standards of validity and reliability.